

# CALIFORNIA STATE BOARD OF HEALTH

## MONTHLY BULLETIN

NOVEMBER, 1913

No. 5



### CONTENTS.

|  | PAGE. |
|--|-------|
| BUREAU REPORTS FOR OCTOBER, 1913—      |       |
| Bureau of Administration.....          | 91    |
| Bureau of Tuberculosis.....            | 91    |
| Bureau of Registration of Nurses.....  | 92    |
| Bureau of the Hygienic Laboratory..... | 93    |
| Bureau of Foods and Drugs.....         | 95    |
| Bureau of Vital Statistics.....        | 99    |
| SPECIAL REPORT—                        |       |
| Birth Registration in California.....  | 107   |

Published every month at the office of the Board, Sacramento.

Entered as second class matter, August 15, 1905, at the post office at Sacramento, California, under the Act of Congress of July 16, 1894.

Printed at the State Printing Office, FRIEND WM. RICHARDSON, Superintendent



# THE CALIFORNIA STATE BOARD OF HEALTH.

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## REGULAR MEETINGS.

The meetings of the California State Board of Health are held regularly the first Saturday of each month, but the quarterly meetings required by law to be held at the Capitol of the State are ordinarily designated as January, April, July, and October.

By courtesy of the University of California the Food and Drug Laboratory and the Hygienic Laboratory are located in University buildings at Berkeley, California.

Address all communications to the

SECRETARY, Sacramento, California



## REPORT OF THE BUREAU OF ADMINISTRATION FOR OCTOBER, 1913.

JOHN F. LEINEN, Director.

In addition to the general routine work of the Bureau, the following matters were reported:

The question of interstate quarantine against rabies was taken up with the Surgeon General after conferring with the local Federal officials.

The Civil Service Commission approved the Board's action in transferring Pure Food and Drug Inspector A. F. Glaive to the position of Assistant Director and appointing Mr. C. W. Poole in his stead.

The Board communicated with the Surgeon General relative to the continuance of Federal care for the typhoid carrier, Olsen.

Plans for the enforcement of the new sewage disposal and water supply laws were considered by the attorney.

The rules adopted by the Board for the enforcement of the rabies control law have been sent to the printer for publication in pamphlet form, and will be ready for distribution in a short while.

The Food Inspection Committee has considered the cold storage law rules and regulations.

The Secretary has received many requests for chemical and biological examinations of water supplies, and, in general, has approved such requests, pending final action on a policy for enforcing the provisions of the new water supply act.

Miss Jammé, director of the Bureau of Registration of Nurses, reported for duty, and has been organizing the details of the Department. Rules and regulations covering the most urgent provisions of the law have been prepared for consideration and adoption.

Doctor Howard, Director of the Bureau of Tuberculosis, returned from his initial inspection, October 20th, and has since been working upon the organization of details of the bureau.

The work of organizing a systematic collection of communicable disease reports has progressed satisfactorily during the month.

## REPORT OF THE BUREAU OF TUBERCULOSIS FOR OCTOBER.

BURT F. HOWARD, M. D., Director.

The month of October was spent in visiting various institutions in the southern part of the State, attending the Health Officers' Convention at Venice, and in preparing a paper for the convention and a report of the trip of inspection.

There have been inspected in all eight county hospitals, twelve private sanatoria and ten dispensaries.

Letters have been written to ten of the superintendents of these institutions in an effort to maintain the personal relation established by the visit. This plan will be continued.

It is also planned to correspond with the Health Officers of the State in an effort to obtain an increase of tuberculosis registration. This



will be attempted to some extent by circular letters, but as the reporting of tuberculosis is more difficult to accomplish in certain sections of the State than it is in others, and as much can not be expected of circular letters, it seems worth while to concentrate on localities which are likely to produce the biggest results. By a study of the tuberculosis death rate it will be seen that about sixty-five per cent of the deaths from tuberculosis in California occur in seven counties. Of these San Francisco and Alameda have made a good beginning in the registration of cases. If the other five will do as well we might soon expect to see the majority of these cases reported before death and thus a most important step be taken toward the prevention of tuberculosis. We plan this month to continue by correspondence work already begun in person in these counties, explaining the object of the law and urging its enforcement.

## REPORT OF THE BUREAU OF REGISTRATION OF NURSES FOR OCTOBER.

ANNA C. JAMMÉ, R. N., Director.

The actual work of the bureau started on October 14th.

The requests for the certificate of registered nurse had been quite numerous during the summer months: 800 were on file in the office of the Secretary, upon the establishment of the bureau.

Application forms were immediately designed and sent to print. They consist of four forms:

No. 1. Letter of instruction and a copy of the act.

No. 2. Application form to be filled out by the applicant, endorsed by two persons having personal knowledge of her character and qualifications and properly attested under oath by a notary public.

No. 3. The certificate of the training school from which the applicant graduated, signed by the superintendent of the school and one witness, certifying to her course of training and moral character.

No. 4. Health record, serving to show the physical qualification of the applicant, signed by a physician.

In general, applicants who are residents of California, of good moral character, sound physical condition, twenty years of age, and whose educational qualifications meet the standard required by the law will be registered without further investigation. Those who do not meet the requirements in full will be considered individually.

Applicants for registration shall be registered without examination until July 1, 1914. After that date an examination will be required, except in cases where the applicant has already been registered in another state having requirements equivalent to those provided for by this act.

The bureau has placed itself in communication with all the hospitals of the State in order to obtain a list of the training schools and the course of instruction now established in the schools.

Lists of accredited schools of other states, where registration laws are in force are being filed by the bureau in order to register nurses who are graduated in other states, and are now residents of California in active practice.



## REPORT OF THE BUREAU OF THE HYGIENIC LABORATORY FOR OCTOBER.

WILBUR A. SAWYER, M.D., Director.

### **Sending Specimens by Mail.**

Under the new parcel post regulations it is permitted to send specimens to the laboratory by parcel post. Notification to this effect has been received in the following excerpt from a letter from Mr. C. S. Merrill, postmaster of Berkeley:

“For your information, I quote herewith the section in the new *parcel post regulations* covering this matter—

‘Specimens of dried blood or diseased tissues or communicable diseases, cultures and tubercular sputum may be mailed in accordance with instructions of the Treasury Department (Bureau of Public Health and Marine-Hospital Service), as promulgated by the Post Office Department under Order No. 3064, of April 22, 1910.’

It will be necessary, of course, for you to bring your parcels to the post office, in order to determine the zone into which they are to be mailed.”

Order No. 3064, referred to in Postmaster Merrill’s letter, prescribes, among other requirements, that cultures of plague and cholera and liquid cultures are not to be admitted to the mails. The order specifies also that specimens shall be sent only in containers which have met certain requirements. The mailing outfits issued by the laboratory have met with the approval of the post office authorities, and they should be used exclusively in transmitting bacteriological specimens through the mails to this laboratory.

By applying letter postage, as heretofore, the regular outfits may be mailed at mail boxes.

Dogs’ heads to be examined for rabies, cows’ ears to be examined for anthrax, and similar specimens are unmailable and should be sent by express only. The postal regulations are explicit in this regard, and violations are frequently investigated by the postal officials.

Mailing outfits, when issued by the laboratory, remain the property of the State and should be used only for the purpose of sending specimens to the State Hygienic Laboratory or its branches. Unused outfits should ultimately be returned to the State Hygienic Laboratory at Berkeley.

### **Pasteur Treatments.**

Forty new patients began the Pasteur treatment during October. Most of them came from Oakland and Berkeley, where rabies is at the present time very prevalent among dogs.

### **Trichinosis.**

Two cases of trichinosis in Berkeley came under the attention of the laboratory in October. The diagnosis was made on the basis of blood examinations and typical symptoms. This disease is seldom recognized and reported to health authorities in this State, although the experience of the laboratory leads us to believe that it is not rare. The disease is contracted by eating undercooked meat from hogs which have been



infected with the disease. Meat inspection, including microscopic examination of certain parts of the carcasses of hogs, would protect against this disease. As we are not now protected in this way, it is important that all pork should be thoroughly cooked before being eaten.

#### Division of Biological Examinations.

*Summary of Examinations made in the California State Hygienic Laboratory during the month of October, 1913.*

| Conditions suspected                        | Positive | Negative | Inconclusive | Total      |
|---|----------|----------|--------------|------------|
| <b>Main Laboratory at Berkeley:</b>         |          |          |              |            |
| Anthrax -----                               | 2        | 2        | -----        | 4          |
| Diphtheria -----                            | 52       | 43       | 1            | 96         |
| Gonococcus infection -----                  | 9        | 14       | -----        | 23         |
| Malaria -----                               | -----    | 11       | -----        | 11         |
| Meningitis -----                            | -----    | 1        | -----        | 1          |
| Rabies -----                                | 38       | 6        | -----        | 44         |
| Tuberculosis -----                          | 4        | 14       | -----        | 18         |
| Typhoid -----                               | 6        | 17       | -----        | 23         |
| Water pollution -----                       | 6        | 3        | 9            | 18         |
| Miscellaneous -----                         | 6        | 3        | 2            | 11         |
|   |          |          |              | 249        |
| <b>Northern Branch at Sacramento:</b>       |          |          |              |            |
| Diphtheria -----                            | 6        | 10       | -----        | 16         |
| Malaria -----                               | -----    | 1        | -----        | 1          |
| Tuberculosis -----                          | -----    | 7        | -----        | 7          |
| Typhoid -----                               | 8        | 8        | -----        | 16         |
|   |          |          |              | 40         |
| <b>San Joaquin Valley Branch at Fresno:</b> |          |          |              |            |
| Diphtheria -----                            | -----    | 6        | -----        | 6          |
| Tuberculosis -----                          | -----    | 2        | -----        | 2          |
| Typhoid -----                               | 1        | 7        | -----        | 8          |
|   |          |          |              | 16         |
| <b>Southern Branch at Los Angeles:</b>      |          |          |              |            |
| Diphtheria -----                            | 4        | 7        | 1            | 12         |
| Tuberculosis -----                          | -----    | 2        | -----        | 2          |
| Typhoid -----                               | -----    | 5        | -----        | 5          |
|   |          |          |              | 19         |
| <b>Total number of examinations -----</b>   |          |          |              | <b>324</b> |

#### Division of Preventive Therapeutics.

*Pasteur Treatment for the Prevention of Rabies by the State Hygienic Laboratory during the month of October, 1913.*

|   | Treatment commenced | Treatment completed |
|---|---------------------|---------------------|
| Main Laboratory at Berkeley -----   | 29                  | 25                  |
| Northern Branch at Sacramento -----   | 0                   | 0                   |
| San Joaquin Valley Branch at Fresno -----   | 0                   | 0                   |
| Southern Branch at Los Angeles -----  | 5                   | 5                   |
| Laboratory of Sacramento Board of Health, by deputized bacteriologist -----           | 1                   | 0                   |
| Laboratory of San Francisco Board of Health, by deputized bacteriologist -----        | 5                   | 2                   |
| Laboratory of Los Angeles Board of Health, by deputized bacteriologist -----          | 0                   | 0                   |
| Laboratory of Letterman General Hospital, Presidio, by deputized bacteriologist ----- | 0                   | 0                   |
|   | 40                  | 32                  |



**Public Health Instruction.***Participation in Instruction in Public Health during October, 1913.*

## Main Laboratory at Berkeley:

|   |    |
|---|----|
| Bacteriological instruction outfits sent out..... | 8  |
| Bacteriological instruction outfits in use.....   | 27 |
| Lectures or talks by the Director.....            | 2  |

**Division of Epidemiological Investigations.***Epidemiological Investigations during October, 1913.*

## Main Laboratory at Berkeley:

|   |   |
|---|---|
| Special Investigations by the Director..... | 2 |
| Investigation of smallpox at Modesto.       |   |
| Investigation of trichinosis in Berkeley.   |   |

**REPORT OF THE BUREAU OF FOODS AND DRUGS FOR OCTOBER.**

M. E. JAFFA, Director.

About one hundred and thirty samples of foods and food products were received for examination and analysis at the State Laboratory during the month of October. A considerable portion of these samples were submitted by state institutions representing delivery samples of respective products.

Among the samples collected by inspectors are quite a number of canned peas colored with copper sulfate, and vinegars improperly labeled. There seems to be still some misunderstanding in the minds of manufacturers regarding the necessity of labeling vinegars which have been reduced by the addition of water. This is in violation of Food Inspection Decision No. 140. The section specially bearing on this part is as follows:

When natural vinegars made from cider, wine, or the juice of other fruits, are diluted with water, the label must plainly indicate this fact; as, for example, "diluted to --- per cent acid strength." When water is added to pomace in the process of manufacture, the fact that the product is diluted must be plainly shown on the label in a similar manner. Dilution of vinegar naturally reduces, not only the acid strength, but the amount of other ingredients in proportion to the dilution, so that reduced vinegars will not comply with the analytical constants for undiluted products; but the relations existing between these various ingredients will remain the same. Diluted vinegars must have an acid strength of at least 4 grams acetic acid per 100 cubic centimeters.

The Laboratory is collecting samples of the different waters used for drinking purposes around the bay cities with the view of ascertaining the composition of such, and whether or not the claims made for some of these waters are in accordance with the facts of the case. We hope to be able to publish some results in the next month's bulletin.

The State Laboratory is in receipt of a circular from Washington with reference to "Fraudulent Radioactive Waters." The warning to the public is of such vital importance that it appears eminently proper to reprint it in full:

There are indications of the beginning of an attempt to perpe-



trate a great fraud on the American people through advertising certain mineral waters as possessing radioactivity. These waters, in some cases, are taken from springs, the waters of which as they come from the ground do possess certain radioactive properties. Examination of many of these waters by the department's specialists indicate that whatever radioactivity they possess at the spring is due almost entirely to radium emanation rather than to the presence in the water of any substance possessing radioactivity. These emanations in the form of gas quickly disappear from the water and as a result, after the water has been bottled a short time, it will possess practically no radioactivity. The belief long held by many people that some mineral waters used at the springs are more effective than when bottled, has been explained by some authorities on the ground that the beneficial effect of these waters is due to radioactivity. As the radioactivity disappears soon after the water is taken from the spring, any effect due to the radioactivity must be lost in a short time. If the radioactivity of a water in a spring is 100, four days after bottling it will be only 50 and twelve days after bottling, 10. In a month it will be practically nothing compared with the original radioactivity of the water at the spring. The public, therefore, is warned to regard with suspicion any water advertised as possessing radioactivity. As far as the Government's specialists have been able to ascertain, no bottled water, no matter how radioactive it may have been at the spring, retains this radioactivity for any length of time.

The Department is now investigating a number of the so-called radioactive waters with the object of securing evidence that can be made a basis of prosecution for misbranding. In the past, before the Food and Drugs Act was enacted, a number of mineral waters made claim to curative properties which they did not possess and succeeded in creating a misplaced confidence on the part of the consumers. This was particularly true of a number of imported waters which were sold extensively in the United States with a statement on the bottle that they were wonderful or magical cures for all sorts of incurable or chronic ailments. The Treasury Department, acting in co-operation with the Department of Agriculture, now refuses admission to the country of foreign waters labeled so as to mislead consumers as to their real or curative properties. The Department fears that unless the public is warned that the fraudulent trade in so-called radioactive waters will develop, just as the fraudulent trade in other mineral waters was developed, to the point where people with strong imaginations will supply their bottlers with all sorts of testimonials asserting that these supposed radioactive waters have effected wonderful cures.



There have been some samples of supposedly radioactive waters submitted to the State Laboratory, and in every case they were found to be fraudulent.

#### Notices of Judgments.

The following list of Notices of Judgments is at hand from the Department of Washington, and interested parties wishing any separate notice should address the Director of the State Food and Drug Laboratory, University of California, Berkeley, Cal.:

- No. 2519—Misbranding of Juniper Berry Gin.
- No. 2520—Misbranding of Nutromalt.
- Nos. 2521, 2522, 2523—Adulteration and Misbranding of Tomato Catsup.
- Nos. 2524, 2530, 2532, 2545—Adulteration and Misbranding of Vinegar.
- No. 2525—Adulteration and Misbranding of Maple Syrup.
- No. 2526—Adulteration and Misbranding of Apple Jelly.
- Nos. 2527, 2533—Adulteration and Misbranding of Lemon Extract, Banana Extract, Strawberry Extract, and Pineapple Extract.
- No. 2528—Adulteration and Misbranding of Chocolate Beans.
- No. 2529—Adulteration and Misbranding of Essence of Wintergreen.
- No. 2531—Adulteration and Misbranding of Shredded Cocoanut.
- No. 2534—Adulteration and Misbranding of Syrup Iron Iodide.
- Nos. 2535, 2541—Adulteration and Misbranding of Oil of Lavender Flowers.
- No. 2536—Adulteration and Misbranding of Maccaroni.
- No. 2537—Adulteration and Misbranding of Ox-Aline Meat Color.
- No. 2538—Adulteration and Misbranding of Olive Oil.
- No. 2539—Adulteration of Oil of Anise.
- No. 2540—Adulteration and Misbranding of Oil of Cassia.
- No. 2542—Misbranding of Syrup.
- No. 2543—Misbranding of Lithia Beer.
- No. 2544—Adulteration of Oil of Cajuput.
- No. 2546—Misbranding of Evaporated Milk.
- No. 2547—Adulteration of Oranges.
- No. 2548—Misbranding of Headache and Anti-Pain Powders.
- No. 2549—Alleged Adulteration and Misbranding of Bleached Flour.
- Supplement of Notice of Judgment No. 2299. Adulteration and Misbranding of Nitroglycerin Tablets.
- Supplement to Notice of Judgment No. 2313. Misbranding of Acetanilid and Sodium Tablets.



*Cases Referred to District Attorneys October 4, 1913.*

| Article                | Violation                                  | Manufacturer | Accused dealer                                | Locality       |
|------------------------|--|--------------|---|----------------|
| Catsup -----           | Mislabeled. Benzoates not declared-----    | -----        | The Eagle Restaurant<br>(Chris Buzos, Propr.) | Vallejo.       |
| Worcestershire Sauce-- | Mislabeled. Benzoates not declared-----    | -----        | The Eagle Restaurant<br>(Chris Buzos, Propr.) | Vallejo.       |
| Kosher Sausage-----    | Mislabeled. Not made from Kosher meat----- | -----        | A. Newman -----                               | San Francisco. |



## REPORT OF BUREAU OF VITAL STATISTICS.\*

GEORGE D. LESLIE, Director.

L. V. BOYLE, Births, Deaths, Marriages.

G. P. JONES, Morbidity Returns.

*State Totals and Annual Rates.*—The following table shows for California as a whole the birth, death and marriage totals for the current and preceding months in comparison with those for the corresponding months of last year, as well as the annual rates per 1,000 population represented by the totals for the current and preceding months. The rates are based on an estimated midyear population of 2,671,491 for California in 1913, the estimate having been made by the Census Bureau method with slight modifications.

*Birth, Death and Marriage Totals, with Annual Rates per 1,000 Population for Current and Preceding Months for California: September.*

| Month           | Monthly total |       | Annual rate<br>per 1,000<br>population:<br>1913 |
|-----------------|---------------|-------|---|
|                 | 1913          | 1912  |   |
| September—      |               |       |   |
| Births -----    | 3,773         | 3,413 | 17.2  |
| Deaths -----    | 2,788         | 2,630 | 12.7  |
| Marriages ----- | 2,831         | 2,797 | 12.9  |
| August—         |               |       |   |
| Births -----    | 3,747         | 3,288 | 16.5  |
| Deaths -----    | 2,920         | 2,710 | 12.9  |
| Marriages ----- | 2,612         | 2,619 | 11.5  |

The September totals were greater this year than last year for births, deaths and marriages as well, the gain being particularly great for births.

*County Totals.*—The first table which follows below shows the monthly birth, death and marriage totals for the principal counties of the State, the list being limited to counties having a population of at least 25,000 according to the Federal Census of 1910. Totals are also shown for San Francisco and other bay counties (Alameda, Contra Costa, Marin, and San Mateo), as well as for Los Angeles and Orange counties together.

*City Totals.*—The second of the following tables gives the birth and death totals for the principal freeholders' charter cities, the list including all chartered cities with a census population of at least 15,000 in 1910. Totals are given likewise for San Francisco in comparison with Oakland, Alameda, and Berkeley, the three cities adjoining one another on the east shore of San Francisco Bay, as well as for Los Angeles in comparison with neighboring chartered cities (Long Beach, Pasadena, Pomona, and Santa Monica).

\*NOTE.—The present report is for the month preceding but one. This order must be followed hereafter because of the publication of the Bulletin during the early part of the month, before the tabulation of records for the preceding month is completed.



*Birth, Death and Marriage Totals for Principal Counties: September.*

| County  | September, 1913 |        |           |
|---|-----------------|--------|-----------|
|   | Births          | Deaths | Marriages |
| California -----                                | 3,773           | 2,788  | 2,831     |
| Counties of more than 25,000 population (1910): |                 |        |           |
| Alameda -----                                   | 383             | 245    | 281       |
| Butte -----                                     | 25              | 18     | 18        |
| Contra Costa -----                              | 56              | 35     | 24        |
| Fresno -----                                    | 138             | 95     | 87        |
| Humboldt -----                                  | 48              | 36     | 21        |
| Kern -----                                      | 50              | 36     | 22        |
| Los Angeles -----                               | 1,065           | 655    | 693       |
| Marin -----                                     | 8               | 18     | 104       |
| Orange -----                                    | 37              | 47     | 138       |
| Riverside -----                                 | 41              | 30     | 40        |
| Sacramento -----                                | 142             | 87     | 104       |
| San Bernardino -----                            | 83              | 77     | 52        |
| San Diego -----                                 | 153             | 109    | 128       |
| San Francisco -----                             | 623             | 519    | 511       |
| San Joaquin -----                               | 58              | 57     | 56        |
| San Mateo -----                                 | 32              | 18     | 23        |
| Santa Barbara -----                             | 37              | 23     | 38        |
| Santa Clara -----                               | 135             | 118    | 104       |
| Santa Cruz -----                                | 33              | 28     | 16        |
| Solano -----                                    | 39              | 15     | 17        |
| Sonoma -----                                    | 51              | 61     | 39        |
| Tulare -----                                    | 40              | 29     | 21        |
| Selected groups:                                |                 |        |           |
| San Francisco and other bay counties -----      | 1,102           | 835    | 943       |
| Los Angeles and Orange counties -----           | 1,102           | 702    | 831       |

*Birth and Death Totals, for Principal Cities: September.*

| City  | September, 1913 |        |
|---|-----------------|--------|
|   | Births          | Deaths |
| Freeholders' charter cities -----             | 2,451           | 1,699  |
| Cities of more than 15,000 population (1910): |                 |        |
| Alameda -----                                 | 29              | 21     |
| Berkeley -----                                | 57              | 23     |
| Fresno -----                                  | 47              | 25     |
| Long Beach -----                              | 42              | 31     |
| Los Angeles -----                             | 740             | 438    |
| Oakland -----                                 | 279             | 175    |
| Pasadena -----                                | 64              | 29     |
| Riverside -----                               | 12              | 13     |
| Sacramento -----                              | *109            | 74     |
| San Diego -----                               | 117             | 88     |
| San Francisco -----                           | 623             | 519    |
| San Jose -----                                | 55              | 31     |
| Stockton -----                                | 22              | 30     |
| Selected groups:                              |                 |        |
| San Francisco -----                           | 623             | 519    |
| Oakland, Alameda and Berkeley -----           | 365             | 219    |
| Totals, bay cities -----                      | 988             | 738    |
| Los Angeles -----                             | 740             | 438    |
| Neighboring cities -----                      | 140             | 87     |
| Totals -----                                  | 880             | 525    |



*Causes of Death.*—The following table shows the classification of deaths in California in the current month, in comparison with the preceding month:

*Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths, for Current and Preceding Month, for California: September.*

| Cause of death                                 | Deaths:<br>September | Proportion per 1,000 |         |
|--|----------------------|----------------------|---------|
|  |                      | September            | August  |
| All Causes -----                               | 2,788                | 1,000.0              | 1,000.0 |
| Typhoid fever -----                            | 47                   | 16.9                 | 16.8    |
| Malarial fever -----                           | 13                   | 4.7                  | 2.7     |
| Measles -----                                  | 1                    | 0.4                  | 4.1     |
| Scarlet fever -----                            | 7                    | 2.5                  | 1.4     |
| Whooping-cough -----                           | 10                   | 3.6                  | 6.9     |
| Diphtheria and croup -----                     | 17                   | 6.1                  | 2.1     |
| Influenza -----                                | 4                    | 1.4                  | 0.4     |
| Plague -----                                   | 1                    | 0.4                  | -----   |
| Other epidemic diseases -----                  | 9                    | 3.2                  | 3.8     |
| Tuberculosis of lungs -----                    | 331                  | 118.7                | 109.9   |
| Tuberculosis of other organs -----             | 60                   | 21.5                 | 21.2    |
| Cancer -----                                   | 184                  | 66.0                 | 69.2    |
| Other general diseases -----                   | 115                  | 41.2                 | 41.8    |
| Meningitis -----                               | 27                   | 9.7                  | 7.5     |
| Other diseases of nervous system -----         | 228                  | 81.8                 | 87.0    |
| Diseases of circulatory system -----           | 443                  | 158.9                | 164.7   |
| Pneumonia and broncho-pneumonia -----          | 127                  | 45.5                 | 43.5    |
| Other diseases of respiratory system -----     | 45                   | 16.1                 | 14.0    |
| Diarrhea and enteritis, under 2 years -----    | 157                  | 56.3                 | 46.2    |
| Diarrhea and enteritis, 2 years and over ----- | 31                   | 11.1                 | 12.7    |
| Other diseases of digestive system -----       | 139                  | 49.9                 | 59.9    |
| Bright's disease and nephritis -----           | 196                  | 70.3                 | 59.3    |
| Childbirth -----                               | 34                   | 12.2                 | 6.5     |
| Diseases of early infancy -----                | 119                  | 42.7                 | 41.4    |
| Suicide -----                                  | 66                   | 23.7                 | 20.9    |
| Other violence -----                           | 256                  | 91.8                 | 108.2   |
| All other causes -----                         | 121                  | 43.4                 | 47.9    |

In September there were 443 deaths, or 15.9 per cent of all, from diseases of the circulatory system, and 391, or 14.0 per cent, from various forms of tuberculosis. Heart disease thus lead tuberculosis for September as for previous months.

Other notable causes of death in September were: Diseases of the digestive system, 327; violence, 322; diseases of nervous system, 255; Bright's disease and nephritis, 196; cancer, 184; diseases of respiratory system, 172; and epidemic diseases, 109.

The deaths from epidemic diseases were as follows: Typhoid fever, 47; diphtheria and croup, 17; malarial fever, 13; whooping-cough, 10; and all other epidemic diseases, 22.



The deaths from the four leading epidemic diseases reported for the month were distributed by counties as follows:

| Typhoid fever   |    | Diphtheria and croup |    | Malarial fever |    |
|-----------------|----|----------------------|----|----------------|----|
| Alameda         | 6  | Alameda              | 1  | Amador         | 1  |
| Butte           | 2  | Fresno               | 1  | Butte          | 1  |
| Colusa          | 1  | Imperial             | 1  | Contra Costa   | 2  |
| Contra Costa    | 1  | Los Angeles          | 6  | Fresno         | 2  |
| Fresno          | 5  | Napa                 | 1  | Placer         | 1  |
| Imperial        | 1  | Sacramento           | 1  | Sacramento     | 2  |
| Kern            | 1  | San Bernardino       | 1  | San Francisco  | 1  |
| Los Angeles     | 7  | San Francisco        | 2  | Shasta         | 2  |
| Modoc           | 2  | Santa Clara          | 2  | Yolo           | 1  |
| Napa            | 1  | Tuolumne             | 1  |                |    |
| Orange          | 1  | Total                | 17 | Total          | 13 |
| Placer          | 1  |                      |    |                |    |
| Sacramento      | 1  |                      |    |                |    |
| San Bernardino  | 1  |                      |    |                |    |
| San Diego       | 1  | Whooping-cough       |    |                |    |
| San Francisco   | 7  | Alameda              | 3  |                |    |
| San Joaquin     | 1  | Los Angeles          | 4  |                |    |
| San Luis Obispo | 1  | San Francisco        | 2  |                |    |
| San Mateo       | 1  | San Luis Obispo      | 1  |                |    |
| Santa Clara     | 3  | Total                | 10 |                |    |
| Siskiyou        | 1  |                      |    |                |    |
| Stanislaus      | 1  |                      |    |                |    |
| Total           | 47 |                      |    |                |    |

*Geographic Divisions.*—The following table presents data for geographic divisions, including the metropolitan area, or San Francisco and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo), in comparison with the rural counties of Northern and Central California:

*Deaths from Main Classes of Diseases, from Geographic Divisions: September.*

| Geographic division             | Deaths: September |                   |                          |        |                            |                                |                                |                              |                                |          |                  |
|---------------------------------|-------------------|-------------------|--------------------------|--------|----------------------------|--------------------------------|--------------------------------|------------------------------|--------------------------------|----------|------------------|
|                                 | All causes        | Epidemic diseases | Tuberculosis (all forms) | Cancer | Diseases of nervous system | Diseases of circulatory system | Diseases of respiratory system | Diseases of digestive system | Bright's disease and nephritis | Violence | All other causes |
| THE STATE                       | 2,788             | 109               | 391                      | 184    | 255                        | 443                            | 172                            | 327                          | 196                            | 322      | 389              |
| Northern California             | 345               | 14                | 37                       | 22     | 38                         | 55                             | 17                             | 49                           | 21                             | 48       | 44               |
| Coast counties                  | 184               | 3                 | 20                       | 13     | 23                         | 38                             | 12                             | 26                           | 9                              | 19       | 21               |
| Interior counties               | 161               | 11                | 17                       | 9      | 15                         | 17                             | 5                              | 23                           | 12                             | 29       | 23               |
| Central California              | 1,464             | 65                | 189                      | 92     | 132                        | 251                            | 96                             | 189                          | 105                            | 141      | 204              |
| San Francisco                   | 519               | 14                | 72                       | 34     | 46                         | 100                            | 44                             | 55                           | 31                             | 49       | 74               |
| Other bay counties              | 316               | 16                | 28                       | 20     | 28                         | 62                             | 16                             | 49                           | 21                             | 35       | 41               |
| Coast counties                  | 195               | 8                 | 27                       | 15     | 19                         | 38                             | 10                             | 30                           | 16                             | 12       | 20               |
| Interior counties               | 434               | 27                | 62                       | 23     | 39                         | 51                             | 26                             | 55                           | 37                             | 45       | 69               |
| Southern California             | 979               | 30                | 165                      | 70     | 85                         | 137                            | 53                             | 89                           | 70                             | 133      | 141              |
| Los Angeles                     | 655               | 21                | 102                      | 59     | 56                         | 95                             | 47                             | 51                           | 53                             | 74       | 97               |
| Other counties                  | 324               | 9                 | 63                       | 11     | 29                         | 42                             | 12                             | 38                           | 17                             | 59       | 44               |
| Northern and Central California | 1,809             | 79                | 226                      | 114    | 170                        | 306                            | 113                            | 238                          | 126                            | 189      | 248              |
| Metropolitan area               | 835               | 30                | 100                      | 54     | 74                         | 162                            | 60                             | 104                          | 52                             | 84       | 115              |
| Rural counties                  | 974               | 49                | 126                      | 60     | 96                         | 144                            | 53                             | 134                          | 74                             | 105      | 133              |

*Sex and Age Periods.*—The proportion of the sexes among the 2,788 decedents in September was: Male, 1,711, or 61.4 per cent; and female, 1,077, or 38.6 per cent.



The following table shows the age distribution by numbers and per cents, of deaths classified by sex:

*Deaths Classified by Sex and Age Periods, with Per Cents by Age Periods, for California: September.*

| Age period             | Deaths |       |        | Per cent |       |        |
|------------------------|--------|-------|--------|----------|-------|--------|
|                        | Total  | Male  | Female | Total    | Male  | Female |
| All ages -----         | 2,788  | 1,711 | 1,077  | 100.0    | 100.0 | 100.0  |
| Under 1 year-----      | 374    | 203   | 171    | 13.4     | 11.9  | 15.9   |
| 1 to 4 years-----      | 128    | 59    | 69     | 4.6      | 3.4   | 6.4    |
| 5 to 14 years-----     | 72     | 38    | 34     | 2.6      | 2.2   | 3.2    |
| 15 to 24 years-----    | 150    | 91    | 59     | 5.4      | 5.3   | 5.5    |
| 25 to 34 years-----    | 306    | 193   | 113    | 11.0     | 11.3  | 10.5   |
| 35 to 44 years-----    | 308    | 208   | 100    | 11.0     | 12.2  | 9.3    |
| 45 to 54 years-----    | 310    | 201   | 109    | 11.1     | 11.7  | 10.1   |
| 55 to 64 years-----    | 341    | 209   | 132    | 12.2     | 12.2  | 12.2   |
| 65 years and over----- | 799    | 509   | 290    | 28.7     | 29.8  | 26.9   |

This table shows that relatively more females than males died at the age periods under 25 years as well as at 65 years and over, while relatively more males than females died at the age periods from 25 to 64 years, generally speaking.

*Occupations.*—The table below gives, for deaths 15 years and over, the number of men and women for whom some occupations were reported in contrast with those for whom no gainful occupation was shown.

*Deaths, 15 Years and Over, Classified by Sex and Occupation, with Per Cents by Sex, for California: September.*

|                            | Deaths |       |        | Per cent male | Per cent female |
|----------------------------|--------|-------|--------|---------------|-----------------|
|                            | Total  | Male  | Female |               |                 |
| 15 years and over-----     | 2,214  | 1,411 | 803    | 63.7          | 36.3            |
| Occupation reported -----  | 1,305  | 1,220 | 85     | 93.5          | 6.5             |
| No gainful occupation----- | 909    | 191   | 718    | 21.0          | 79.0            |

Of the 1,305 decedents for whom occupations were reported the males numbered 1,220, or 93.5 per cent, and the females only 85, or 6.5 per cent.

The following table shows the distribution of male decedents 15 years and over, engaged in the main kinds of occupations.

*Deaths of Males Fifteen Years and Over Engaged in Gainful Occupations, Classified by Kind of Occupation, with Per Cents, for California: September.*

| Kind of occupation  | Males 15 years and over |          |
|---|-------------------------|----------|
|   | Deaths                  | Per cent |
| All occupations -----                                       | 1,220                   | 100.0    |
| Professional -----  | 69                      | 5.7      |
| Clerical and official-----                                  | 85                      | 7.0      |
| Mercantile and trading-----                                 | 100                     | 8.2      |
| Public entertainment-----                                   | 22                      | 1.8      |
| Personal service, police and military-----                  | 42                      | 3.4      |
| Laboring and servant-----                                   | 266                     | 21.8     |
| Manufacturing and mechanical industry-----                  | 277                     | 22.7     |
| Agriculture, transportation and other outdoor pursuits----- | 350                     | 28.7     |
| All other occupations-----                                  | 9                       | 0.7      |



Of the 1,220 male decedents for whom occupations were reported, 350, or 28.7 per cent, were engaged in agriculture, transportation, and other outdoor pursuits; 277, or 22.7 per cent, in manufacturing and mechanical industry; 266, or 21.8 per cent in laboring and servant work; and altogether 327, or 26.8 per cent, in professional, clerical and official, mercantile and trading, and all other occupations.

It should be noted that the figures on deaths occurring in different occupations are necessarily affected by the fact that in California a large number of men are engaged in agriculture and other outdoor pursuits, while relatively few follow professional and similar occupations which show small numbers of deaths.

#### Morbidity Reports for October.

The maximum number of typhoid fever cases were reported during October, as is usual. One half the annual number of cases are reported during July, August, September and October, the numbers of cases reported during those months being as follows:

|                 |     |
|-----------------|-----|
| July -----      | 213 |
| August -----    | 185 |
| September ----- | 165 |
| October -----   | 284 |
| Total -----     | 847 |

Poliomyelitis was reported from Humboldt County, 8 cases with one death having occurred in Eureka. There were 4 cases in Los Angeles. There were only 19 cases reported in the State during October.

Stockton and Nevada City continued to report smallpox cases, there being 7 and 8 cases, respectively, in each place. Bakersfield reported 5 cases. Thirty-five cases were reported in the State during the month.

#### Smallpox.

*Table Showing Distribution of Cases Reported during October, 1913.*

| Counties and cities      | Number of new cases reported during month | Number vaccinated within seven years preceding attack | Number last vaccinated more than seven years preceding attack | Number never successfully vaccinated |
|--------------------------|---|---|---|--------------------------------------|
| Alameda County -----     |   |   |   |                                      |
| Oakland -----            | 1   |   |   | 1                                    |
| Kern County -----        |   |   |   |                                      |
| Bakersfield -----        | 5   |   |   | 5                                    |
| Los Angeles County ----- | 1   |   |   | 1                                    |
| Los Angeles -----        | 5   |   | 1   | 4                                    |
| Nevada County -----      |   |   |   |                                      |
| Nevada City -----        | 8   |   |   | 8                                    |
| San Francisco -----      | 1   |   |   | 1                                    |
| San Joaquin County ----- | 2   |   |   | 2                                    |
| Stockton -----           | 7   |   |   | 7                                    |
| Sacramento County -----  |   |   |   |                                      |
| Sacramento -----         | 1   |   |   | 1                                    |
| Santa Clara County ----- |   |   |   |                                      |
| San Jose -----           | 1   |   |   | 1                                    |
| Santa Clara -----        | 1   |   |   | 1                                    |
| Stanislaus County -----  |   |   |   |                                      |
| Modesto -----            | 2   |   |   | 2                                    |
| Totals -----             | 35  |   | 1   | 34                                   |



**Typhoid Fever.***Distribution of Cases Reported during October, 1913.*

| Counties and cities       | Number of<br>new cases<br>reported<br>during<br>month | Counties and cities         | Number of<br>new cases<br>reported<br>during<br>month |
|---------------------------|---|-----------------------------|---|
| Alameda County -----      |   | Orange County -----         |   |
| Berkeley -----            | 2   | Fullerton -----             | 2   |
| Oakland -----             | 49  | Orange -----                | 1   |
| Alameda -----             | 1   | Placer County -----         |   |
| Hayward -----             | 1   | Rocklin -----               | 1   |
| Piedmont -----            | 2   | Plumas County -----         | 1   |
| Pleasanton -----          | 1   | Riverside County -----      |   |
| Colusa County -----       | 4   | Corona -----                | 1   |
| Contra Costa County ----- |   | Riverside -----             | 1   |
| Richmond -----            | 1   | Sacramento County -----     |   |
| El Dorado County -----    |   | Sacramento -----            | 23  |
| Placerville -----         | 1   | San Benito County -----     | 5   |
| Fresno County -----       |   | San Bernardino County ----- | 2   |
| Coalinga -----            | 1   | San Diego County -----      |   |
| Fowler -----              | 2   | National City -----         | 2   |
| Fresno -----              | 5   | San Diego -----             | 1   |
| Humboldt County -----     |   | San Francisco -----         | 54  |
| Eureka -----              | 4   | Santa Clara County -----    |   |
| Imperial County -----     |   | Mayfield -----              | 1   |
| El Centro -----           | 8   | Palo Alto -----             | 1   |
| Lassen County -----       | 3   | San Joaquin County -----    |   |
| Los Angeles County -----  | 1   | Lodi -----                  | 1   |
| Long Beach -----          | 3   | Siskiyou County -----       | 1   |
| Los Angeles -----         | 60  | Sonoma County -----         |   |
| Pomona -----              | 1   | Petaluma -----              | 1   |
| San Fernando -----        | 1   | Santa Rosa -----            | 1   |
| Sawtelle -----            | 1   | Sonoma -----                | 1   |
| San Gabriel -----         | 2   | Solano County -----         |   |
| Redondo Beach -----       | 1   | Benicia -----               | 2   |
| Mariposa County -----     | 1   | Stanislaus County -----     | 2   |
| Mendocino County -----    | 1   | Newman -----                | 22  |
| Ft. Bragg -----           | 1   | Yolo County -----           | 1   |
| Willeys -----             | 1   | Wheatland -----             | 1   |
| Ukiah -----               | 1   |                             |   |
| Monterey County -----     | 7   |                             |   |
| Monterey -----            | 4   |                             |   |
| Salinas -----             | 1   |                             |   |
| Napa County -----         |   | Total -----                 | 284   |
| Napa -----                | 1   |                             |   |

**Poliomyelitis (Infantile Paralysis).***Distribution of Cases Reported during October, 1913.*

| Counties and cities      | Number of<br>new cases<br>reported<br>during<br>month | Counties and cities         | Number of<br>new cases<br>reported<br>during<br>month |
|--------------------------|---|-----------------------------|---|
| Alameda County -----     |   | Riverside County -----      |   |
| Alameda -----            | 1   | Riverside -----             | 1   |
| Oakland -----            | 1   | Sacramento County -----     |   |
| Humboldt County -----    |   | Sacramento -----            | 1   |
| Eureka -----             | 8   | San Bernardino County ----- |   |
| Los Angeles County ----- |   | Colton -----                | 2   |
| Los Angeles -----        | 4   |                             |   |
| Pasadena -----           | 1   | Total -----                 | 19  |



**Epidemic Cerebrospinal Meningitis.***Distribution of Cases Reported during October, 1913.*

| Counties and cities      | Number of<br>new cases<br>reported<br>during<br>month | Counties and cities     | Number of<br>new cases<br>reported<br>during<br>month |
|--------------------------|---|-------------------------|---|
| Alameda County -----     |   | Stanislaus County ----- |   |
| Oakland -----            | 1   | Turlock -----           | 1   |
| Los Angeles County ----- | 1   | Yolo County -----       |   |
| San Francisco -----      | 2   | Winters -----           | 1   |
| Monterey County -----    | 1   | Total -----             | 7   |

**Number of Cases of Scarlet Fever, Measles, Diphtheria and other Diseases  
Reported during October, 1913.**

| Disease                    | Total<br>number<br>of new<br>cases |
|----------------------------|------------------------------------|
| Scarlet fever -----        | 244                                |
| Measles -----              | 42                                 |
| Diphtheria -----           | 199                                |
| Dysentery -----            | 3                                  |
| Leprosy -----              | 2                                  |
| Beri-beri -----            | 1                                  |
| Chickenpox -----           | 133                                |
| Amoebiasis -----           | 1                                  |
| Erysipelas -----           | 9                                  |
| German measles -----       | 5                                  |
| Gonococcus infection ----- | 12                                 |
| Malaria -----              | 22                                 |
| Glanders -----             | 1                                  |
| Mumps -----                | 61                                 |
| Hookworm -----             | 1                                  |
| Pneumonia -----            | 24                                 |
| Syphilis -----             | 9                                  |
| Tuberculosis -----         | 410                                |
| Tetanus -----              | 3                                  |
| Trachoma -----             | 1                                  |
| Whooping-cough -----       | 134                                |



## BIRTH REGISTRATION IN CALIFORNIA.

By LEWIS V. BOYLE, JR., Deputy Statistician.

It is generally conceded that birth registration is an essential and proper field for state action. In order that this may be fully understood, I shall attempt to give some reasons for the necessity of having births registered by the State.

In "The Survey," September 3, 1910, Florence Kelly, general secretary of the Consumers' League, has the following to say upon this matter.

"In a rapidly growing number of states children must produce their birth certificates before they can go to work. In New York City they must produce such certificates before they can enter the public schools, and again before they can go to work. The exceptional children admitted upon other evidence of age are put to such inconvenience in the process that every exertion is made by parents to get birth certificates. Of 28,000 children, native born and foreign born alike, who get working papers each year in New York City between the ages of 14 and 16 years, three fourths have birth certificates. *The remaining quarter who fail to get birth certificates are native American children and those who come from certain parts of Russia or from the earthquake district of Italy.* What earthquake and revolution do in Europe official slovenliness accomplishes throughout the greater part of this nation in depriving the children and citizens of the most fundamental of all vital and industrial statistics, the record of births."

Dr. Cressy L. Wilbur, chief statistician, Bureau of the Census, has the following to say upon the necessity of birth registration:

"The accurate statement of infantile mortality requires the complete and satisfactory registration of both births and deaths. Infantile mortality is the ratio of the number of deaths of infants under one year of age (exclusive of stillbirths) to 1,000 children born alive. We can not, therefore, compute the true amount of infantile mortality from the registration of deaths alone."\*

In order to emphasize the legal importance of birth registration, I quote a specific case mentioned by Dr. John N. Hurty, secretary of the State Board of Health of Indiana, in his chairman's address on "The Bookkeeping of Humanity," at the meeting of the Section on Preventative Medicine, American Medical Association, 1910.

"Farmer Hadley of Indiana, dying, left his valuable farm in trust to his unthrifty son to go to his granddaughter on her twenty-first birthday. The girl had been told the date of her birth and always celebrated as her birthday the annual recurrence of the same. However, when she believed she was twenty-one she then claimed her inheritance and her father denied her age, saying she was only nineteen. The family Bible was appealed to (we have

\*Report of the committee of registration of births reprinted from transactions, first annual meeting American Association for Study and Prevention of Infantile Mortality, Baltimore, November 9-11, 1910.



few family Bibles nowadays) but the leaf of the record was gone. No birth record had been retained and the attending physician was dead. The court was in a quandary. A Solomon was needed for judgment. At last a neighbor remembered that a valuable cow belonging to the grandfather had given birth to a calf on the day the girl was born, and he could swear to it. Perhaps the grandfather had recorded the date of birth of the calf. His farm books show this to be the case. *The date of birth of a human being was established.*"

I may also add that the State Board of Health has many times received requests for copies of certificates for births occurring in San Francisco before the fire of April 18, 1906, from foreigners who were compelled by their government to procure a birth certificate in order to establish the fact of birth of their children. As the records were burned in the fire of 1906, it has been impossible to accede to these requests. Of course this has put the people desiring copies of certificates to a great deal of inconvenience in searching for evidence, and in many instances, after a long search, no evidence has been obtained. It may also be mentioned that the Chinese and Japanese of California, in almost every instance, register their births. They do this in order to be able to easily prove the citizenship of their people to the United States immigration authorities. Thus it is seen that the Oriental people of the State realize the importance of birth registration to a greater extent than do the bulk of the American citizens.

#### Review of Birth Registration in California.

Turning now from general observations upon the necessity and importance of birth registration, I shall discuss at some length birth registration in California.

Under the law of 1905, requiring physicians and midwives to file certificates of birth with the county recorder and City Health Officer for transmittal to the State Bureau of Vital Statistics, there has been marked improvement in the completeness of birth registration. But with all the improvement there remains a great deal yet to be done to make birth registration as perfect as marriage and death registration. Returns are now available for the seven calendar years, 1906 to 1912 inclusive. A steady rise in the birth total is shown by the following table giving the birth total compared with death and marriage totals.

TABLE 1.— Birth Total (with Increase and Rate per 1,000) compared with Death and Marriage Totals for California: 1906 to 1912.

|                           | 1912   | 1911   | 1910   | 1909   | 1908   | 1907   | 1906   |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|
| Births -----              | 39,330 | 34,828 | 32,138 | 30,882 | 28,077 | 24,674 | 20,974 |
| Increase -----            | 4,502  | 2,690  | 1,256  | 2,805  | 3,403  | 3,700  | -----  |
| Per cent -----            | 12.9   | 8.4    | 4.1    | 10.0   | 13.8   | 17.6   | -----  |
| Rate per 1,000 population | 15.2   | 14.0   | 13.4   | 13.4   | 12.7   | 11.6   | 10.3   |
| Deaths -----              | 36,709 | 34,012 | 32,398 | 30,985 | 31,287 | 31,095 | 29,303 |
| Marriages -----           | 31,276 | 27,303 | 24,937 | 22,917 | 21,739 | 23,005 | 21,317 |



While the death and marriage totals for California have fluctuated somewhat in the seven years, each having decreased once though increasing thereafter, the birth total has grown steadily in successive years, rising from 20,974 in 1906 to 24,674 in 1907, 28,077 in 1908, 30,882 in 1909, 32,138 in 1910, 34,828 in 1911 and 39,330 in 1912. Beginning with 1911 the aggregate birth registration in California exceeded the annual death total for the first time; in 1911 the 34,828 births surpassing the 34,012 deaths by 816 or 2.4 per cent; and in 1912 the 39,330 births exceeded the 36,709 deaths by as many as 2,621 or 7.1 per cent, still-births being excluded throughout.

But California's per cent of births over deaths is far below that of some of the other states of the United States. In 1911 New York had 52.0 per cent more births registered than were deaths registered. In 1911 California had only 2.4 per cent more births registered than were deaths. In 1911 New York had a birth rate of 23.6 per 1,000 population, while during that year California only had a rate of 14.0 per 1,000 population. But it must be stated that the registration law has been in effect in New York since 1885 and in California only since 1905.<sup>1</sup> In this connection it is also to be noted that New York has a much larger foreign population than California, in which element of the population the birth rate is usually higher than in other elements of the population.

In Indiana in 1910<sup>2</sup> the births were 54.2 per cent more than the deaths. In California for the same year the births were less than the deaths.

The successive increases shown in Table 1 indicate that the number and per cent increase necessarily grow less and less as registration becomes more and more complete, since the early gains were swollen by improved registration while recent gains include little except the natural growth of population. Thus, the greatest increase shown is that of 3,700 or 17.6 per cent for 1906 to 1907, due largely to improved registration. However, the greatest gain in birth registration is 4,502 or 12.9 per cent for 1911 to 1912, which exceeds in reality any gain for any previous period. Moreover, the birth rate per 1,000 population was highest of all, 15.2 for 1912 as compared with 14.0 for 1911, 13.4 for 1910 and 1909, 12.7 for 1908, 11.6 for 1907 and 10.3 for 1906.

Turning now from the discussion of birth, death and marriage totals, I shall endeavor to discuss birth increase for California as a whole and by geographic divisions.

<sup>1</sup>Assembly Documents 1912, Vol. 24, No. 39, page 72.

<sup>2</sup>Indiana State Board of Health Report, 1910, page 463.



TABLE 2.—Birth Totals, with Increases, for Geographic Divisions: 1906 to 1912.

| Geographic divisions                 | Births |        |        |        |        |        | Increase, 1911 to 1912 |           | Increase, 1910 to 1911 |           | Increase, 1909 to 1910 |           | Increase, 1908 to 1909 |           | Increase, 1907 to 1908 |           | Increase, 1906 to 1907 |       |      |
|--------------------------------------|--------|--------|--------|--------|--------|--------|------------------------|-----------|------------------------|-----------|------------------------|-----------|------------------------|-----------|------------------------|-----------|------------------------|-------|------|
|                                      | 1912   | 1911   | 1910   | 1909   | 1908   | 1907   | 1906                   | Number... | Per cent...            | Number... | Per cent...            | Number... | Per cent...            | Number... | Per cent...            | Number... | Per cent...            |       |      |
|                                      |        |        |        |        |        |        |                        |           |                        |           |                        |           |                        |           |                        |           |                        |       |      |
| THE STATE-----                       | 39,330 | 34,828 | 32,138 | 30,882 | 28,077 | 24,674 | 20,974                 | 4,502     | 12.9                   | 2,690     | 8.4                    | 1,256     | 4.1                    | 2,805     | 10.0                   | 3,403     | 13.8                   | 3,700 | 17.6 |
| Northern California---               | 3,596  | 3,462  | 3,216  | 3,155  | 2,698  | 2,405  | 2,232                  | 134       | 3.9                    | 246       | 7.6                    | 61        | 1.9                    | 457       | 16.9                   | 293       | 12.2                   | 173   | 7.8  |
| Coast counties ----                  | 1,529  | 1,525  | 1,324  | 1,336  | 1,151  | 953    | 824                    | 4         | †                      | 201       | 15.2                   | *12       | *0.9                   | 185       | 16.1                   | 198       | 20.8                   | 129   | 15.7 |
| Interior counties--                  | 2,067  | 1,937  | 1,892  | 1,819  | 1,547  | 1,452  | 1,408                  | 130       | 6.7                    | 45        | 2.4                    | 73        | 4.0                    | 272       | 17.6                   | 95        | 6.5                    | 44    | 3.1  |
| Central California-----              | 21,218 | 19,525 | 18,263 | 18,209 | 16,351 | 14,347 | 11,889                 | 1,693     | 8.7                    | 1,262     | 6.9                    | 54        | 3.0                    | 1,858     | 11.4                   | 2,004     | 14.0                   | 2,458 | 20.7 |
| San Francisco -----                  | 6,954  | 6,708  | 6,482  | 6,630  | 6,058  | 5,128  | 3,923                  | 246       | 3.7                    | 226       | 3.5                    | *148      | *2.2                   | 572       | 9.4                    | 930       | 18.1                   | 1,205 | 30.7 |
| Other bay counties                   | 5,058  | 4,856  | 4,557  | 4,534  | 4,262  | 3,944  | 2,849                  | 202       | 4.2                    | 299       | 6.6                    | 23        | .5                     | 272       | 6.4                    | 318       | 8.1                    | 1,095 | 38.4 |
| Coast counties ----                  | 2,455  | 2,241  | 2,080  | 2,216  | 2,063  | 1,924  | 1,831                  | 214       | 9.5                    | 161       | 7.7                    | *136      | *6.1                   | 153       | 7.4                    | 139       | 7.2                    | 93    | 5.1  |
| Interior counties--                  | 6,751  | 5,720  | 5,144  | 4,829  | 3,968  | 3,351  | 3,286                  | 1,031     | 18.0                   | 576       | 11.2                   | 315       | 6.5                    | 861       | 21.7                   | 617       | 18.4                   | 65    | 2.0  |
| Southern California---               | 14,516 | 11,841 | 10,659 | 9,518  | 9,028  | 7,922  | 6,853                  | 2,675     | 22.6                   | 1,182     | 11.1                   | 1,141     | 12.0                   | 490       | 5.4                    | 1,106     | 14.0                   | 1,069 | 15.6 |
| Los Angeles -----                    | 10,408 | 8,371  | 7,624  | 6,710  | 6,404  | 5,823  | 4,778                  | 2,037     | 24.3                   | 747       | 9.8                    | 914       | 13.6                   | 306       | 4.8                    | 581       | 10.0                   | 1,045 | 21.9 |
| Other counties ----                  | 4,108  | 3,470  | 3,035  | 2,808  | 2,624  | 2,099  | 2,075                  | 638       | 18.4                   | 435       | 14.3                   | 227       | 8.1                    | 184       | 7.0                    | 525       | 25.0                   | 24    | 1.2  |
| Northern and Central California----- | 24,814 | 22,987 | 21,479 | 21,364 | 19,049 | 16,752 | 14,121                 | 1,827     | 7.9                    | 1,508     | 7.0                    | 115       | 5.4                    | 2,315     | 12.2                   | 2,297     | 13.7                   | 2,631 | 18.6 |
| Coast counties ----                  | 15,996 | 15,330 | 14,443 | 14,716 | 13,534 | 11,949 | 9,427                  | 666       | 4.3                    | 887       | 6.1                    | *273      | *1.8                   | 1,182     | 8.7                    | 1,585     | 13.3                   | 2,522 | 26.8 |
| Interior counties--                  | 8,818  | 7,657  | 7,036  | 6,648  | 5,515  | 4,803  | 4,694                  | 1,161     | 15.2                   | 621       | 8.8                    | 388       | 5.8                    | 1,133     | 20.5                   | 712       | 14.8                   | 109   | 2.3  |
| Metropolitan area                    | 12,012 | 11,564 | 11,039 | 11,164 | 10,320 | 9,072  | 6,772                  | 448       | 3.9                    | 525       | 4.8                    | *125      | *1.2                   | 844       | 8.2                    | 1,248     | 13.8                   | 2,300 | 34.0 |
| Rural counties ----                  | 12,802 | 11,423 | 10,440 | 10,200 | 8,729  | 7,680  | 7,349                  | 1,379     | 12.1                   | 983       | 9.4                    | 240       | 2.3                    | 1,471     | 16.9                   | 1,049     | 13.7                   | 331   | 4.5  |

\*Decrease.

†Less than one tenth of 1 per cent.



In 1906 for California as a whole there were 20,974 births registered. In 1907 the number had increased to 24,674, or an increase of 17.6 per cent. The increase from 1907 to 1908 was 13.8 per cent; 1908 to 1909, 10.0 per cent; 1909 to 1910, 4.1 per cent; 1910 to 1911, 8.4 per cent; 1911 to 1912, 12.9 per cent. The largest increase, that of 17.6 per cent from 1906 to 1907, was due of course to improvement in registration. This was due also to a lesser extent for the figures of 13.8 per cent for 1907 to 1908, and 10.0 per cent for 1908 to 1909. For 1909 to 1911 the increases were only 4.1 per cent and 8.4 per cent respectively. But from 1911 to 1912 the average gain rose to 12.9 per cent, the best by far for any period since the registration law has been in effect in California.

Comparing the three great sections of the State, Northern, Central and Southern California, we find that for the years 1906 to 1907 Central California had a gain of 20.7 and 14.0 per cent respectively; Northern California had 7.8 and 12.2 per cent respectively, and Southern California had 15.6 and 14.0 per cent respectively. In 1908 to 1909 Northern California led with an increase of 16.9 per cent over that of Central California with an increase of 11.4 per cent and over Southern California with an increase of 5.4 per cent. Since 1909 Southern California has easily outstripped the other two divisions of the State. From 1909 to 1910 Southern California had an increase of 12.0 per cent, Central California 3.0 per cent, and Northern California 1.9 per cent. In 1910 to 1911 Southern California increased 11.1 per cent, Central California 6.9 per cent and Northern California 7.6 per cent. From 1911 to 1912 Southern California showed a large increase of 22.6 per cent, while Central California showed only an increase of 8.7 per cent and Northern California 3.9 per cent. These figures seem to indicate not only that population is increasing faster in Southern California, but that birth registration is somewhat more complete there than in the remaining sections of the State.

This table also discloses the same fact as pointed out above both for San Francisco and Los Angeles counties, for from 1906 to 1907 San Francisco increased 30.7 per cent and Los Angeles County increased only 21.9 per cent. From 1907 to 1908 San Francisco increased 18.1 and Los Angeles County increased 10.0 per cent; and from 1908 to 1909 San Francisco increased 9.4 per cent and Los Angeles 4.8 per cent. From 1909 to 1912, however, Los Angeles County outstripped San Francisco by increasing at the following ratios, 13.6 per cent for 1909 to 1910, 9.8 per cent for 1910 to 1911, and 24.3 per cent for 1911 to 1912. During the same period San Francisco decreased from 1909 to 1910 2.2 per cent and increased from 1910 to 1911 3.5 per cent and from 1911 to 1912 3.7 per cent. This would seem to indicate that the completeness of registration improved more rapidly in San Francisco during the first three years and in Los Angeles County during the last three years. It must, however, be admitted that part of the increase in Los Angeles County for the last three years is due to growth in population and not to improved registration.







BIRTH REGISTRATION.

113

|                |        |        |        |        |        |       |       |      |       |       |      |      |       |       |       |       |       |      |
|----------------|--------|--------|--------|--------|--------|-------|-------|------|-------|-------|------|------|-------|-------|-------|-------|-------|------|
| Santa Monica   | 143    | 115    | 102    | 83     | 93     | 70    | 28    | 24.3 | 13    | 12.7  | 19   | 22.9 | *10   | *10.8 | 23    | 32.9  | ---   | ---  |
| Riverside      | 279    | 287    | 250    | 250    | 225    | 105   | *8    | 2.8  | 27    | 14.8  | ---  | ---  | 25    | 11.1  | 120   | 114.3 | ---   | ---  |
| San Bernardino | 190    | 189    | 215    | 207    | 219    | 188   | 1     | 0.5  | *26   | *12.1 | 8    | 3.9  | *12   | *5.5  | 31    | 16.5  | 55    | 41.4 |
| San Diego      | 762    | 675    | 524    | 467    | 423    | 332   | 87    | 12.9 | 151   | 28.8  | 57   | 12.2 | 44    | 10.4  | 91    | 27.4  | 69    | 26.2 |
| Santa Barbara  | 190    | 180    | 223    | 158    | 141    | 129   | 10    | 5.5  | *43   | *19.3 | 65   | 41.1 | 17    | 12.1  | 12    | 9.3   | *44   | *2.5 |
| Rest of State  | 14,503 | 13,023 | 11,721 | 11,976 | 10,491 | 8,888 | 1,480 | 11.4 | 1,302 | 11.1  | *255 | *2.1 | 1,485 | 14.2  | 1,603 | 18.0  | 1,369 | 16.5 |

\*Decrease.



The above table shows the per cent of increase in births for the entire state and for freeholders' charter cities arranged geographically, as well as for the rest of the state as a whole. A comparison of the increases for births registered in freeholders' charter cities and the rest of the state discloses the fact that the preponderance of increase has not been confined to either freeholders' charter cities or the rest of the state. From 1906 to 1907 we find that the rest of the state increased 16.5 per cent, while the freeholders' charter cities increased 18.4 per cent; from 1907 to 1908, however, the rest of the state increased 18.0 per cent and the freeholders' charter cities increased 11.4 per cent. Again, in 1908 to 1909 the rest of the state increased 14.2 per cent and the freeholders' charter cities increased 7.5 per cent. In 1909 to 1910 the order was again reversed, the freeholders' charter cities increasing 8.0 per cent and the rest of the state decreasing 2.1 per cent; in 1910 to 1911 the order was again changed, the rest of the state increasing 11.1 per cent and the freeholders' charter cities 6.8 per cent; in 1911 to 1912 the order was again changed, the freeholders' charter cities increased 13.9 per cent and the rest of the state 11.4 per cent. Thus, it seems that birth registration does not increase any faster in the cities than in rural population, or vice versa. In passing it may be mentioned that the freeholders' charter cities, roughly speaking, represent the urban population of the state, while the rest of the state represents the rural population.



TABLE 4.—Comparison of Per Cents of Increases in Births and Marriages, for Counties:  
1906 to 1912.

| County           | Per cent of increase |           |               |           |               |           |               |           |               |           |               |           |
|------------------|----------------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|---------------|-----------|
|                  | 1911 to 1912         |           | 1910 to 1911  |           | 1909 to 1910  |           | 1908 to 1909  |           | 1907 to 1908  |           | 1906 to 1907  |           |
|                  | Births<br>---        | Marriages | Births<br>--- | Marriages | Births<br>--- | Marriages | Births<br>--- | Marriages | Births<br>--- | Marriages | Births<br>--- | Marriages |
| CALIFORNIA-----  | 12.9                 | 14.5      | 8.4           | 9.5       | 4.1           | 8.8       | 10.0          | 5.4       | 13.8          | 5.5       | 17.6          | 7.9       |
| Alameda -----    | 3.8                  | 9.7       | 3.7           | 4.3       | 0.7           | 0.01      | 9.6           | 3.4       | 4.4           | 15.1      | 38.8          | 0.3       |
| Alpine -----     |                      | 200.0     | 57.1          |           | 75.0          | 100.0     | 42.9          | 100.0     | 16.7          |           |               | 100.0     |
| Amador -----     | 2.1                  | 31.9      | 49.2          | 19.0      | 34.4          | 1.7       | 113.3         | 7.5       | 27.4          | 19.7      | 14.8          | 10.8      |
| Butte -----      | 11.0                 | 27.3      | 2.7           | 7.4       | 13.4          | 10.9      | 40.2          | 2.5       | 6.1           | 10.8      | 4.2           | 31.4      |
| Calaveras -----  | 4.3                  | 2.9       | 13.1          | 41.7      | 15.1          | 20.0      | 9.6           | 18.9      | 21.1          | 28.8      |               | 26.8      |
| Colusa -----     | 49.2                 | 28.9      | 30.9          | 25.0      | 28.8          | 44.0      | 7.6           | 13.8      | 10.2          | 14.7      | 46.7          | 10.5      |
| Contra Costa --  | 9.0                  | 14.1      | 24.4          | 4.1       | 23.6          | 17.1      | 1.3           | 5.7       | 0.3           | 13.0      | 61.7          | 2.0       |
| Del Norte -----  | 182.0                | 25.0      | 69.4          | 12.5      | 16.1          | 60.0      | 10.7          | 28.6      | 3.7           | 250.0     | 10.0          | 33.3      |
| El Dorado -----  | 30.9                 | 18.9      | 13.8          | 2.8       | 9.3           | 16.3      | 12.2          | 6.5       | 21.0          | 2.2       | 33.6          | 6.2       |
| Fresno -----     | 28.2                 | 19.1      | 17.2          | 6.0       | 4.3           | 14.6      | 18.1          | 3.3       | 11.0          | 10.5      | 9.6           | 14.8      |
| Glenn -----      | 71.6                 | 18.5      | 27.6          | 131.4     | 38.1          | 2.9       | 2.4           | 41.7      | 46.4          | 40.0      | 3.7           | 11.1      |
| Humboldt -----   | 5.5                  | 15.4      | 8.4           | 10.0      | 3.4           | 4.1       | 8.3           | 1.1       | 186.0         | 14.7      | 208.9         | 20.3      |
| Imperial -----   | 28.7                 | 26.2      | 0.6           | 52.5      | 48.5          | 3.9       | 61.7          | 22.2      |               |           |               |           |
| Inyo -----       | 64.0                 | 39.5      | 47.1          | 7.5       | 19.0          | 8.1       | 25.0          | 27.6      | 75.0          | 27.5      | 45.5          | 207.7     |
| Kern -----       | 29.4                 | 23.7      | 26.3          |           | 36.2          | 45.3      | 27.9          | 21.7      | 31.9          | 2.9       | 14.8          | 35.5      |
| Kings -----      | 7.0                  | 25.8      | 7.3           | 1.1       | 0.8           | 5.5       | 16.3          | 37.2      | 53.7          | 0.6       | 8.8           | 20.0      |
| Lake -----       | 8.5                  | 19.4      | 15.7          | 24.0      | 10.8          | 24.2      | 16.3          | 25.0      | 20.8          | 29.4      | 44.3          | 3.0       |
| Lassen -----     | 20.7                 | 17.8      | 26.1          | 36.4      | 6.9           | 10.0      | 22.9          | 18.9      | 18.6          | 37.0      | 19.4          | 18.2      |
| Los Angeles ---- | 24.3                 | 19.6      | 9.8           | 14.9      | 13.6          | 10.2      | 4.8           | 11.2      | 9.9           | 8.2       | 21.9          | 7.6       |
| Madera -----     | 7.7                  | 60.3      | 10.8          |           | 17.1          | 1.7       | 4.7           | 24.0      | 1.8           | 27.1      | 16.1          | 20.4      |
| Marin -----      | 4.2                  | 25.1      | 14.9          | 14.1      | 8.4           | 6.3       | 17.5          | 20.0      | 24.8          | 0.9       | 19.2          | 6.3       |
| Mariposa -----   | 77.0                 | 33.3      | 18.2          |           | 50.0          |           | 10.0          | 29.4      | 42.9          | 13.3      | 133.3         | 11.8      |
| Mendocino -----  | 9.7                  | 17.0      | 6.6           | 5.1       | 22.5          | 1.2       | 21.8          | 11.5      | 5.9           | 27.2      | 3.8           | 8.5       |
| Merced -----     | 5.4                  | 25.5      | 53.3          | 4.3       | 62.1          | 30.7      | 134.1         | 1.1       | 30.2          | 7.4       | 21.2          | 1.2       |
| Modoc -----      | 5.3                  | 7.4       | 6.2           | 14.9      | 19.4          | 6.8       | 36.7          | 10.0      | 18.3          | 5.3       | 14.3          | 15.2      |
| Mono -----       | 800.0                | 20.0      | 400.0         |           | 163.6         |           | 37.5          | 25.0      | 300.0         | 20.0      | 100.0         | 25.0      |
| Monterey -----   | 1.6                  | 11.0      | 3.4           | 35.9      | 11.0          | 2.9       | 0.7           | 2.8       | 1.4           | 9.7       | 25.6          | 12.6      |
| Napa -----       | 5.9                  | 2.4       | 9.5           | 8.9       | 2.3           | 27.9      | 14.6          | 13.6      | 15.8          | 21.4      | 2.2           | 27.2      |
| Nevada -----     | 11.1                 | 13.3      | 17.2          | 8.2       | 17.5          | 2.1       | 2.4           | 14.5      | 6.7           | 5.1       | 13.3          | 12.5      |
| Orange -----     | 28.9                 | 20.7      | 25.0          | 12.4      | 8.5           | 9.2       | 7.6           | 40.5      | 36.2          | 2.8       | 15.5          | 21.8      |
| Placer -----     | 17.1                 | 23.3      | 34.8          | 1.1       | 16.6          | 16.7      | 52.2          | 9.9       | 76.9          | 21.1      | 13.3          | 2.3       |
| Plumas -----     | 12.2                 | 16.7      | 12.5          | 66.7      | 30.2          | 28.0      | 6.5           | 92.3      | 48.4          | 38.1      | 13.9          |           |
| Riverside -----  | 4.1                  | 23.8      | 19.3          | 8.7       | 8.1           | 12.1      | 13.8          | 5.7       | 33.0          | 5.3       | 6.4           | 4.2       |
| Sacramento ----  | 15.5                 | 15.4      | 0.8           | 2.3       | 37.4          | 13.5      | 17.3          | 11.6      | 24.2          | 9.2       | 13.4          | 13.9      |
| San Benito ----- | 63.9                 | 3.8       | 3.4           | 23.4      | 34.4          | 30.6      | 4.9           | 16.9      | 45.2          | 25.5      | 16.0          | 19.0      |
| San Bernardino.. | 22.6                 | 12.7      | 0.7           | 7.6       | 12.9          | 8.9       | 4.2           | 15.8      | 15.4          | 7.2       | 8.6           | 13.4      |
| San Diego -----  | 12.3                 | 15.8      | 31.6          | 27.9      | 17.0          | 22.9      | 0.6           | 8.0       | 30.8          | 8.0       | 15.1          | 8.1       |
| San Francisco -- | 3.6                  | 16.8      | 3.5           | 11.3      | 2.2           | 11.4      | 9.4           | 4.4       | 18.1          | 3.0       | 30.7          | 17.5      |
| San Joaquin ---- | 2.7                  | 5.2       | 30.7          | 6.5       | 18.0          | 5.9       | 16.3          | 0.2       | 22.5          | 10.9      | 0.7           | 9.6       |
| San Luis Obispo  | 18.1                 | 15.5      | 2.1           | 8.7       | 19.0          | 16.5      | 3.9           | 2.4       | 12.2          | 7.6       | 7.7           | 5.9       |
| San Mateo -----  | 6.9                  | 1.0       | 12.6          | 8.4       | 0.5           | 17.7      | 3.2           | 8.5       | 50.0          | 9.3       | 32.2          | 2.0       |
| Santa Barbara..  | 12.9                 | 17.9      | 1.2           | 1.6       | 28.9          | 13.8      | 2.4           | 0.9       | 7.6           | 21.2      | 16.0          | 16.1      |
| Santa Clara ---- | 3.1                  | 8.0       | 11.5          | 6.7       | 15.0          | 5.8       | 15.4          | 0.8       | 8.6           | 1.2       | 3.5           | 5.9       |
| Santa Cruz ----- | 23.6                 | 1.8       | 8.3           | 1.1       | 5.2           | 3.8       | 7.5           | 7.1       | 1.8           | 18.9      | 1.2           | 10.4      |
| Shasta -----     | 2.8                  | 9.0       | 4.7           | 7.6       | 10.3          | 15.3      | 29.2          | 32.8      | 3.8           | 11.1      | 33.8          | 10.5      |
| Sierra -----     | 17.9                 | 15.4      | 7.7           | 18.7      | 10.3          |           | 21.6          | 128.6     | 27.6          | 12.5      | 39.6          | 50.0      |
| Siskiyou -----   | 1.3                  | 10.6      | 13.5          | 1.2       | 16.0          | 3.8       | 8.8           | 4.7       | 52.6          | 24.2      | 11.4          | 5.5       |
| Solano -----     | 11.6                 | 5.1       |               | 7.6       | 8.2           | 4.6       | 2.1           | 4.4       | 25.8          | 3.2       | 0.4           | 17.2      |
| Sonoma -----     |                      | 3.1       | 41.7          | 7.5       | 6.3           | 6.1       | 22.2          | 8.8       | 12.8          |           | 1.6           | 4.7       |
| Stanislaus ----- | 59.0                 | 29.9      | 56.7          | 16.5      | 11.5          | 20.6      | 75.7          | 4.4       | 4.6           | 31.7      | 8.4           | 4.0       |
|                  | 4.3                  | 7.7       | 3.1           |           | 5.5           | 13.3      | 44.4          | 20.0      | 31.5          | 13.8      | 80.4          | 12.1      |
| Tehama -----     | 39.5                 | 0.9       | 2.4           | 3.9       |               | 2.8       | 6.4           | 10.4      | 17.0          | 22.6      | 30.6          | 39.3      |
| Trinity -----    | 32.6                 |           | 53.6          |           | 3.4           | 25.0      | 45.0          |           | 42.9          | 27.3      | 40.0          | 38.9      |
| Tulare -----     | 32.1                 | 17.0      | 1.2           | 7.8       | 17.5          | 6.9       | 13.4          | 21.6      | 21.0          | 9.2       | 5.7           | 12.6      |
| Tuolumne -----   | 7.3                  | 21.9      | 40.6          | 33.3      | 5.4           | 21.3      | 128.1         | 8.9       | 966.6         | 9.7       | 372.7         | 3.3       |
| Ventura -----    | 52.0                 | 9.7       | 6.1           | 16.1      | 31.5          | 24.4      | 73.7          | 11.2      | 4.2           | 14.3      | 53.8          | 3.1       |
| Yolo -----       | 6.6                  | 18.4      | 8.7           | 20.0      | 33.0          | 6.7       | 120.0         | 15.2      | 14.6          | 12.9      | 43.8          | 11.4      |
| Yuba -----       | 8.2                  | 4.0       | 23.0          | 2.6       | 29.9          | 15.6      | 31.1          | 16.9      |               | 19.8      | 4.2           | 17.1      |

Italic figures—decrease.



This table was made for the purpose of comparing the registration of births and marriages. In passing, it may be said that the State Board of Health receives a certificate of marriage for practically every marriage in the State. It must also be admitted that the fluctuation of marriages registered depends largely upon two elements, first, the growth of population, and second, the economic prosperity of the State. This is also of course true to a greater or less extent for the total number of births. Thus it would seem to be true that if marriages increase steadily births should also increase at the same ratio or one somewhat greater. However, a comparison of the increase of births and marriages from 1906 to 1912 in California does not establish this fact, for in 1906 to 1907 the marriages increased 7.9 per cent and the births increased 17.6 per cent. This would seem to indicate that births were increasing faster than marriages, but such is not the case as the increase here was largely due to improved registration. In 1907 to 1908 marriages decreased 5.5 per cent while births increased 13.8 per cent. This again is to be explained by increase of registration of births. In 1908 to 1909 marriages increased 5.4 per cent while births increased 10.0 per cent. Again this increase of births over marriages must be explained by improvement in registration. Since 1909, however, marriages have increased at a larger ratio than births. In 1909 to 1910 the increase for marriages was 8.8 per cent and for births 4.1 per cent; in 1910 to 1911 the increase for marriages was 9.5 per cent and for births 8.4 per cent; 1911 to 1912 the increase for marriages was 14.5 per cent and for births 12.9 per cent. The only explanation that seems possible for the last three years for this increase is that registration of births is less complete than registration of marriages.

The per cent of increase for each county, both marriages and births, for the period of 1906 to 1912, may be secured by detailed examination of Table No. 4.



The following list of the counties of the State was prepared with the idea of showing each county's increase in births as compared with the increase of the State as a whole from the years 1906 to 1912:

| Above State average three years<br>or more   | Below State average at least three<br>years, or at least two years<br>below and two years a loss  | Showing absolute loss three years<br>or more, or loss two years<br>and constant at least one year  |
|--|---|--|
| Contra Costa, 3a, 2b, 1L.<br>Colusa, 3a, 3L<br>Del Norte, 3a, 1b, 2L.<br>El Dorado, 3a, 3b.<br>Fresno, 3a, 2b, 1L.<br>Glenn, 4a, 2b.<br>Imperial, 3a, 1b.<br>Inyo, 3a, 3b.<br>Kern, 5a, 1L.<br>Lassen, 4a, 2L.<br>Los Angeles, 4a, 2b.<br>Marin, 3a, 3L.<br>Mariposa, 5a, 1L.<br>Merced, 4a, 1b, 1L.<br>Mono, 4a, 2L.<br>Napa, 3a, 1b, 2L.<br>Orange, 4a, 2L.<br>Placer, 4a, 2L.<br>Riverside, 4a, 1b, 1L.<br>Sacramento, 4a, 2b.<br>San Benito, 3a, 1b, 2L.<br>San Bernardino, 3a, 3b.<br>San Diego, 3a, 2b, 1L.<br>San Joaquin, 3a, 3L.<br>San Mateo, 3a, 3b.<br>Stanislaus, 3a, 3L.<br>Sutter, 3a, 3L.<br>Trinity, 4a, 2L.<br>Tulare, 4a, 2L.<br>Ventura, 4a, 1b, 1L. | Alameda, 4b, 1L, 1a.<br>Butte, 3b, 2a, 1L.<br>Kings, 3b, 2a, 1L.<br>Madera, 3b, 1a, 2L.<br>Monterey, 2b, 2L, 2a.<br>San Francisco, 3b, 2a, 1L.<br>San Luis Obispo, 2a, 2b,<br>2L.<br>Santa Barbara, 2a, 2b, 2L.<br>Santa Clara, 2a, 2b, 2L.<br>Solano, 3b, 1a, 1L, 1c.<br>Yuba, 2b, 2a, 1L, 1c. | Alpine, 2L, 2c, 2a.<br>Calaveras, 2L, 1c, 2b, 1a.<br>Lake, 3L, 1b, 2a.<br>Mendocino, 3L, 1b, 2a.<br>Modoc, 3L, 1b, 2a.<br>Nevada, 4L, 2b.<br>Plumas, 3L, 2b, 1a.<br>Santa Cruz, 3L, 2b, 1a.<br>Shasta, 3L, 1b, 2a.<br>Sierra, 3L, 1b, 2a.<br>Siskiyou, 4L, 2a.<br>Sonoma, 2L, 1c, 1b, 2a.<br>Tehama, 2L, 1c, 1b, 2a.<br>Tuolumne, 3L, 1b, 2a.<br>Yolo, 3L, 1b, 2a. |

a—above State average.  
b—below State average.  
L—absolute loss.  
c—constant.

In conclusion it may be stated that since the per cent of increase in births has fallen short of the rate of gain in marriages in the three years last past, some doubt necessarily arises as to the completeness with which births are being registered throughout California. It was shown at the outset of this article that birth registration is very important indeed to protect the interests of the child, to facilitate the collection of adequate data on children's diseases, and generally to insure the State's having proper legal records of its new-born citizens. It is to be hoped that physicians and midwives will realize their responsibility not only to the law of the State, but also to the inherent rights of families and children in the matter of prompt registration of each and every birth occurring in California.



# LIST OF COUNTY AND CITY HEALTH OFFICERS.

|                      |                         |                      |                      |
|----------------------|-------------------------|----------------------|----------------------|
| Alameda County—      |                         | Kings County—        |                      |
| Dr. C. L. McKown     | Niles                   | Dr. C. L. Scott      | Hanford              |
| Alameda              | Dr. A. Hieronymus       | Lemoore              | Dr. E. H. Byron      |
| Albany               | Dr. F. R. Woolsey       | Hanford              | Dr. C. L. Scott      |
| Berkeley             | Dr. J. J. Benton        | Lake County—         |                      |
| Emeryville           | Dr. A. T. Drennan       | Dr. W. E. Upton      | Kelseyville          |
| Hayward              | Dr. F. W. Browning      | Kelseyville          | Dr. W. E. Upton      |
| Livermore            | Dr. H. G. McGill        | Lakeport             | J. G. West           |
| Oakland              | Dr. Allen F. Gillihan   | Lassen County—       |                      |
| Piedmont             | Mr. George T. Burchaell | Dr. R. W. T. Garner  | Susanville           |
| Pleasanton           | Dr. J. Hal Cope         | Susanville           | Dr. E. S. Drucks     |
| San Leandro          | Mr. Budd Eber           | Los Angeles County—  |                      |
| Alpine County—       |                         | Dr. E. O. Sawyer     | Los Angeles          |
| Mr. Fred S. Dunlap   | Markleeville            | Alhambra             | Dr. F. E. Corey      |
| Amador County—       |                         | Arcadia              | Dr. C. D. Gaylord    |
| Dr. E. E. Endicott   | Jackson                 | Avalon               | Percy E. Mackey      |
| Jackson              | George Hambric          | Azusa                | Dr. John E. Hill     |
| Sutter Creek         | Dr. J. H. McLaughlin    | Burbank              | Dr. E. H. Thompson   |
| Butte County—        |                         | Claremont            | Dr. F. W. Thomas     |
| Dr. L. Q. Thompson   | Gridley                 | Compton              | J. W. Stone          |
| Biggs                | Dr. O. C. Hawkins       | Covina               | Dr. J. D. Reed       |
| Chico                | Mr. G. H. Taylor        | Eagle Rock           | Dr. C. H. Phinney    |
| Gridley              | Dr. L. L. Thompson      | El Monte             | Dr. S. L. Corpe      |
| Oroville             | Dr. W. F. Gates         | Glendale             | Dr. R. E. Chase      |
| Calaveras County—    |                         | Glendora             | Dr. C. H. Wood       |
| Dr. Geo. F. Pache    | Angels                  | Hermosa Beach        | B. F. Brown          |
| Angels               | Dr. E. W. Weirich       | Huntington Park      | Dr. W. Thompson      |
| Colusa County—       |                         | Inglewood            | Dr. H. A. Putnam     |
| Dr. C. A. Poage      | Colusa                  | Long Beach           | Dr. W. H. Newman     |
| Colusa               | Dr. C. A. Poage         | Lordsburg            | Dr. J. E. Hubble     |
| Contra Costa County— |                         | Los Angeles          | Dr. L. M. Powers     |
| Dr. W. S. George     | Antioch                 | Manhattan Beach      | E. M. Jenkins        |
| Antioch              | Dr. W. S. George        | Monrovia             | Dr. Abram Hostetter  |
| Concord              | Dr. F. F. Neff          | Pasadena             | Dr. Stanley P. Black |
| Hercules             | Dr. M. L. Fernandez     | Pomona               | Dr. Will H. Holmes   |
| Martinez             | Dr. E. E. Brown         | Redondo Beach        | Dr. D. R. Hancock    |
| Pinole               | Dr. M. L. Fernandez     | San Fernando         | Dr. Kenneth W. Allen |
| Pittsburg            | Dr. F. S. Gregory       | San Marino           |                      |
| Richmond             | Dr. Chas. R. Blake      | Santa Monica         | Dr. W. H. Parker     |
| Del Norte County—    |                         | Sawtelle             | Dr. A. B. Hromadka   |
| Dr. E. M. Fine       | Crescent City           | Sierra Madre         | Dr. R. H. Mackerras  |
| Crescent City        | Dr. E. M. Fine          | South Pasadena       | Dr. C. A. Whiting    |
| El Dorado County—    |                         | Tropico              | Dr. Wm. C. Mabry     |
| Dr. L. M. Leisenring | Placerville             | Venice               | Dr. W. M. Kendall    |
| Placerville          | P. J. Hall              | Vernon               | Dr. O. R. Stafford   |
| Fresno County—       |                         | Watts                | Dr. J. L. Lamb       |
| Dr. G. L. Long       | Fresno                  | Whittier             | Dr. W. H. Stokes     |
| Clovis               | M. S. McMurty           | San Gabriel          | Dr. Ruth Purcell     |
| Coalinga             | Dr. C. W. Hutchison     | Madera County—       |                      |
| Fowler               | Dr. C. O. Mitchel       | Dr. Dow H. Ransom    | Madera               |
| Fresno               | Dr. L. R. Willson       | Madera               | Dr. Dow H. Ransom    |
| Kingsburg            |                         | Marin County—        |                      |
| Sanger               | Dr. Powers              | Dr. J. H. Kuser      | Novato               |
| Selma                | Dr. F. H. Williams      | Belvedere            | Dr. Florence Scott   |
| Glenn County—        |                         | Larkspur             |                      |
| Dr. J. A. Randolph   | Willows                 | Mill Valley          | Capt. M. Staples     |
| Orland               | Dr. D. L. Martin        | Ross                 | C. A. Meussdorfer    |
| Willows              | Dr. J. T. Gardner       | San Anselmo          | Dr. Chipman          |
| Humboldt County—     |                         | San Rafael           | Dr. W. J. Stone      |
| Dr. Carl T. Wallace  | Eureka                  | Sausalito            | Dr. A. H. Mays       |
| Arcata               | Dr. G. W. McKinnon      | Mariposa County—     |                      |
| Blue Lake            | Dr. G. N. Wood          | Dr. T. W. Gallion    | Mariposa             |
| Eureka               | Dr. J. A. Wing          | Mendocino County—    |                      |
| Ferndale             | Dr. J. A. Lane          | Dr. Judson Liftchild | Ukiah                |
| Fortuna              | Dr. Geo. S. Loveren     | Fort Bragg           | Dr. L. C. Gregory    |
| Imperial County—     |                         | Point Arena          |                      |
| Dr. Virgil McCoombs  | El Centro               | Potter Valley        | F. C. Mosier         |
| Brawley              | Mr. S. A. Armstrong     | Ukiah                | Dr. J. Liftchild     |
| Calexico             | Dr. W. F. Smith         | Willits              | Dr. F. C. Gunn       |
| El Centro            | M. A. Stover            | Merced County—       |                      |
| Holtville            |                         | Dr. J. H. Mudd       | Merced               |
| Imperial             | Dr. C. E. Standlee      | Los Banos            | Dr. J. L. McClelland |
| Inyo County—         |                         | Merced               | Dr. Brett Davis      |
| Dr. I. J. Woodin     | Independence            | Modoc County—        |                      |
| Bishop               | Dr. C. E. Turner        | Dr. W. E. Coppedge   | Alturas              |
| Kern County—         |                         | Alturas              | Dr. John Stile       |
| Dr. G. M. Bumgarner  | Bakersfield             | Mono County—         |                      |
| Bakersfield          | H. Farris               | Dr. R. A. Cushman    | Bridgeport           |
| Maricopa             | Dr. H. N. Taylor        | Monterey County—     |                      |
| Taft                 | Dr. F. C. Galehouse     | Dr. Garth Parker     | Salinas              |
| Tehachapi            | Dr. N. J. Brown, Jr.    | King City            | Dr. D. Brumwell      |
| McKittrick           | G. M. Chittwood         | Monterey             | R. L. Anderson       |
|                      |                         | Pacific Grove        | Charles E. Tuck      |
|                      |                         | Salinas              | F. A. Abbott         |